

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 01 MAR 2001

14

Applicant's or agent's file reference 1063	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL99/00504	International filing date (day/month/year) 16 SEPTEMBER 1999	Priority date (day/month/year) 17 SEPTEMBER 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): G06F 12/14 and US Cl.: 713/200		
Applicant REDLER, YESHAYAHU		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13 APRIL 2000	Date of completion of this report 01 DECEMBER 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer Robert W. Beausoliel Jr. <i>Robert W. Beausoliel Jr.</i>
Facsimile No. (703) 305-3718	Telephone No. (703) 308-7090

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL99/00504

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages (See Attached) _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the sequence listing part of the description:
pages (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. 23
- ☒ the drawings, sheets/fig. NONE

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL99/00504

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims <u>1, 12-15, 22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1, 12-15, 22</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1, 12-15, 22</u>	YES
	Claims <u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1, 12-15 and 22 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a secure keyboard single integrated encoder device without removable media.

Claims 2-11 and 16-21 have been deleted.

----- NEW CITATIONS -----
NONE

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

I. BASIS OF REPORT:

This report has been drawn on the basis of the description,
page(s) 1-19, as originally filed.
page(s) NONE, filed with the demand.
and additional amendments:
NONE

This report has been drawn on the basis of the claims,
page(s) NONE, as originally filed.
page(s) NONE, as amended under Article 19.
page(s) NONE, filed with the demand.
and additional amendments:
Claim PAGES 20-22, filed with the letter of 01 December 2000

This report has been drawn on the basis of the drawings,
page(s) 1-8, as originally filed.
page(s) NONE, filed with the demand.
and additional amendments:
NONE

This report has been drawn on the basis of the sequence listing part of the description:
page(s) NONE, as originally filed.
pages(s) NONE, filed with the demand.
and additional amendments:
NONE

CLAIMS:

1. A secure data entry peripheral device in a computer system, said device comprising:

means for at least one of entry, collection and reading of data information;

controller means for encoding said data information for presentation to the computer system, and

means associated with said controller for processing said encoded data information by performing thereon at least one operation amongst operations including encryption, decryption, data manipulation and non-volatile storage,

said processed encoded data information providing a secure transaction when transmitted within the computer system, and when decrypted and decoded for use at a remote location.

2. The device of claim 1 configured as a secure mouse device.

3. The device of claim 1 configured as a secure mouse device wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data.

4. The device of claim 1 configured as a secure mouse device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data received via asynchronous communication means.

5. The device of claim 1 configured as a secure mouse device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data received via computer bus signals transferred through a mouse interface card.

6. The device of claim 1 configured as a secure mouse device having a mini-keypad for entry of data.

7. Deleted
8. Deleted
9. Deleted
10. Deleted
11. Deleted
12. The device of claim 1 wherein said single integrated device includes an internal EEPROM memory as an integral part of said device, which stores secure information.
13. The device of claim 1 wherein said single integrated device includes secure, protected encryption keys and data as an internal and integral non-removable element.
14. The device of claim 1 wherein said single integrated device further comprises a secure command interpreter which operates to manipulate commands.
15. The device of claim 1 wherein said single integrated device is capable of preventing unauthorized use of software programs.
16. Deleted
17. Deleted
18. Deleted.
19. Deleted
20. Deleted
21. Deleted
22. A method of providing secure data entry in a computer system, said method comprising the steps of:

performing at least one of entry, collection and reading of data
information via a standard data entry device configured as a secure keyboard device;

encoding said data information within said standard data entry device
for presentation to the computer system, and
processing, within said standard data entry device, said encoded data
information by performing thereon at least one operation amongst operations
including encryption, decryption, data manipulation and non-volatile storage,
said processed encoded data information providing a secure transaction
when transmitted within the computer system, and when decrypted and decoded for
use at a remote location,
wherein said encoding step is performed by a keyboard encoder and
said processing step is performed by an electronic device capable of
encrypting/decrypting and storing data entered via said keyboard,
wherein said keyboard encoder and said electronic device comprise a single
integrated device, and
wherein said single integrated device does not use removable media such as a
Smartcard, security token and the like.

23. Deleted.

24. Deleted.

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: EDWARD LANGER
POB 412
RAANANA 43103
ISRAEL

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

26 FEB 2001

Applicant's or agent's file reference
1063

IMPORTANT NOTIFICATION

International application No.
PCT/IL99/00504

International filing date (day/month/year)
16 SEPTEMBER 1999

Priority Date (day/month/year)
17 SEPTEMBER 1998

Applicant
REDLER, YESHAYAHU

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ROBERT W. BEAUSOLIEL JR

Telephone No. (703) 308-7090

Peggy Hauer

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT


(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1063	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL99/00504	International filing date (<i>day/month/year</i>) 16 SEPTEMBER 1999	Priority date (<i>day/month/year</i>) 17 SEPTEMBER 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): G06F 12/14 and US Cl.: 713/200		
Applicant REDLER, YESHAYAHU		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
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- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13 APRIL 2000	Date of completion of this report 01 DECEMBER 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer <div style="text-align: right; font-family: cursive;">  </div> Robert W. Beausoliel Jr. Telephone No. (703) 308-7090
Facsimile No. (703) 305-3718	

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL99/00504

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

- ☒ the claims:
pages _____ (See Attached) _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

- ☒ the drawings:
pages _____ (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

- ☒ the sequence listing part of the description:
pages _____ (See Attached) _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
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- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages _____ NONE _____
- ☒ the claims, Nos. _____ 23 _____
- ☒ the drawings, sheets/fig _____ NONE _____

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

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**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL99/00504

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims	<u>1, 12-15, 22</u>	YES
	Claims	<u>NONE</u>	NO
Inventive Step (IS)	Claims	<u>1, 12-15, 22</u>	YES
	Claims	<u>NONE</u>	NO
Industrial Applicability (IA)	Claims	<u>1, 12-15, 22</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1, 12-15 and 22 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a secure keyboard single integrated encoder device without removable media.

Claims 2-11 and 16-21 have been deleted.

----- NEW CITATIONS -----
NONE

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

I. BASIS OF REPORT:

This report has been drawn on the basis of the description,
page(s) 1-19, as originally filed.
page(s) NONE, filed with the demand.
and additional amendments:
NONE

This report has been drawn on the basis of the claims,
page(s) NONE, as originally filed.
page(s) NONE, as amended under Article 19.
page(s) NONE, filed with the demand.
and additional amendments:
Claim PAGES 20-22, filed with the letter of 01 December 2000

This report has been drawn on the basis of the drawings,
page(s) 1-8, as originally filed.
page(s) NONE, filed with the demand.
and additional amendments:
NONE

This report has been drawn on the basis of the sequence listing part of the description:
page(s) NONE, as originally filed.
pages(s) NONE, filed with the demand.
and additional amendments:
NONE

CLAIMS:

1. A secure data entry peripheral device in a computer system, said device comprising:

means for at least one of entry, collection and reading of data information;

controller means for encoding said data information for presentation to the computer system, and

means associated with said controller for processing said encoded data information by performing thereon at least one operation amongst operations including encryption, decryption, data manipulation and non-volatile storage,

said processed encoded data information providing a secure transaction when transmitted within the computer system, and when decrypted and decoded for use at a remote location.

2. The device of claim 1 configured as a secure mouse device.

3. The device of claim 1 configured as a secure mouse device wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data.

4. The device of claim 1 configured as a secure mouse device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data received via asynchronous communication means.

5. The device of claim 1 configured as a secure mouse device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data received via computer bus signals transferred through a mouse interface card.

6. The device of claim 1 configured as a secure mouse device having a mini-keypad for entry of data.

7. The device of claim 1 configured as a secure mouse device wherein said controller means is a mouse encoder and said processing means comprises an electronic device capable of encrypting/decrypting and storing data entered via said mouse, and wherein said mouse encoder and said electronic device comprise a single integrated device.
8. The device of claim 7 wherein said single integrated device further comprises a secure command interpreter which operates to manipulate commands.
9. The device of claim 7 wherein said single integrated device is capable of preventing unauthorized use of software programs.
10. The device of claim 1 configured as a secure keyboard device, wherein said controller means is a keyboard encoder and said processing means comprises an electronic device capable of encrypting/decrypting and storing data entered via said keyboard, and wherein said keyboard encoder and said electronic device comprise a single integrated device.
11. The device of claim 10 wherein said single integrated device does not use removable media such as a Smartcard, security token and the like.
12. The device of claim 10 wherein said single integrated device includes an internal EEPROM memory as an integral part of said device, which stores secure information.
13. The device of claim 10 wherein said single integrated device includes secure, protected encryption keys and data as an internal and integral non-removable element.
14. The device of claim 10 wherein said single integrated device further comprises a secure command interpreter which operates to manipulate commands.

15. The device of claim 10 wherein said single integrated device capable of preventing unauthorized use of software programs.

16. The device of claim 1 configured as a secure voice recognition device, wherein said processing means comprises an electronic device capable of encrypting/decrypting analog data entered via a microphone.

17. The device of claim 1 configured as a secure voice recognition device, wherein said processing means comprises an electronic device capable of encrypting/decrypting data received via at least one of synchronous and asynchronous communication signals, serial clock and data signals, and computer bus signals.

18. The device of claim 1 configured as a secure voice recognition device including an interface to a Smartcard component as an integral part of the device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data via an algorithm contained on said Smartcard.

19. The device of claim 1 configured as a secure voice recognition device including an interface to a Smartcard component as an integral part of the device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data via said Smartcard..

20. The device of claim 1 configured as a secure voice recognition device including an interface to a Smartcard component as an integral part of the device, wherein said processing means comprises an electronic device capable of encrypting/decrypting and storing data via manipulation of commands in a command interpreter on said Smartcard.

21. The device of claim 1 configured as a secure voice recognition device including an interface to a Smartcard component as an integral part of the device,

wherein said processing means comprises an electronic device capable of preventing unauthorized use of software programs.

22. A method of providing secure data entry in a computer system, said method comprising the steps of:

performing at least one of entry, collection and reading of data information via a standard data entry device including a computer mouse, keyboard, voice system and the like;

encoding said data information within said standard data entry device for presentation to the computer system, and

processing, within said standard data entry device, said encoded data information by performing thereon at least one operation amongst operations including encryption, decryption, data manipulation and non-volatile storage,

said processed encoded data information providing a secure transaction when transmitted within the computer system, and when decrypted and decoded for use at a remote location.

23. A secure data entry peripheral device in a computer system, substantially as described herein by way of example and with reference to the drawings.

24. A method of providing secure data entry in a computer system, substantially as described herein by way of example and with reference to the drawings.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1063	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IL99/00504	International filing date (day/month/year) 16 SEPTEMBER 1999	(Earliest) Priority Date (day/month/year) 17 SEPTEMBER 1998
Applicant REDLER, YESHAYAHU		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☒ Certain claims were found unsearchable (See Box I).
2. ☐ Unity of invention is lacking (See Box II).
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 - ☐ filed with the international application.
 - ☐ furnished by the applicant separately from the international application,
 - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - ☐ transcribed by this Authority.
4. With regard to the title,
 - ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - ☐ the text is approved as submitted by the applicant.
 - ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
Figure No. 2
 - ☐ as suggested by the applicant.
 - ☒ because the applicant failed to suggest a figure.
 - ☐ because this figure better characterizes the invention.
 - ☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00504**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 23 and 24
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

the specific invention claimed by each of claims 23 and 24 is unclear. See PCT rule 5.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The abstract is too long (PCT Rule 8.1(b)). The abstract must be less than 150 words, or 200 words when no Figure is to be published.

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

A secure data entry peripheral device in a computer system featuring an encryption technique integrated within the device itself, and not by other means, so that each transmission of data from the peripheral device is already encrypted, giving it a high level of security with its initial transmission. Encryption on the proposed single chip microprocessor is completely secure because the 'Keyboard', 'Data entry' or 'Analog voice' encoding and encryption are on the same chip by storing encryption keys and secure data in EEPROM memory (31). There is no opportunity for external interference, which could compromise the integrity of the data enabling maintenance of a high security level. The device can be applied to a keyboard, computer mouse or voice recognition circuit used as data entry devices. Since each device utilizes a microcontroller (25) in its standard configuration, the encryption technique of the present invention can be applied easily and efficiently.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00504

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 12/14

US CL : 713/200

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 713/200, 201, 202

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,E ---- Y,E	US 5,987,155 A (DUNN et al.) 16 November 1999, col. 6, line 3 - col. 7, line 2.	1,16-20, 22 ---- 2-15,21
Y	Secure Mouse for Internet. IBM tech. dis. bull. December 1997. Vol 40. No. 12. page 27	2-9
Y	US 5,596,718 A (BOEBERT et al.) 21 January 1997, col 4 line 27 - col 6 line 13	9,15,21
Y	US 5,605,406 A (BOWEN) 25 February 1997, col 5 line 21 - col 12 line 43	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
C document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

13 JANUARY 2000

Date of mailing of the international search report

14 FEB 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

Joseph Palys

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00504

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,745,055 A (REDLICH et al.) 28 April 1998, col. 5, line 51 - col. 6 line 11	7
Y	US 5,809,143 A (HUGHES) 15 September 1998, col. 2 line 51 - col. 12 line 18	1-22
Y	US 5,748,888 A (ANGELO et al.) 05 May 1998, col. 3 line 33 - col. 8 line 67	11
Y	US 5,742,758 A (DUNHAM et al.) 21 April 1998, col. 7 line 3 - col. 8 line 52	12
Y	US 5,359,660 A (CLARK et al.) 25 October 1994, col. 3 lines 3-26	13
Y	US 5,305,384 A (ASHBY et al.) 19 April 1994, col. 9 line 56 - col. 15 line 68	16-21

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL99/00504

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

IBM Technical Disclosure Bulletin, IEEE electronic library

search terms: secure mouse

WEST

search terms: secure mouse, secure keyboard, voice recognition, smart card, non-volatile memory, security, encode, encrypt, decrypt, data manipulation, process, peripheral, asynchronous

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International application No.
PCT/IL99/00504

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 12/14

US CL : 713/200

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 713/200, 201, 202

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,E ---- Y,E	US 5,987,155 A (DUNN et al.) 16 November 1999, col. 6, line 3 - col. 7, line 2.	1,16-20, 22 ---- 2-15,21
Y	Secure Mouse for Internet. IBM tech. dis. bull. December 1997. Vol 40. No. 12. page 27	2-9
Y	US 5,596,718 A (BOEBERT et al.) 21 January 1997, col 4 line 27 - col 6 line 13	9,15,21
Y	US 5,605,406 A (BOWEN) 25 February 1997, col 5 line 21 - col 12 line 43	1-22

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
E	earlier document published on or after the international filing date	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
L	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
O	document referring to an oral disclosure, use, exhibition or other means	*G* document member of the same patent family
P	document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

13 JANUARY 2000

Date of mailing of the international search report

14 FEB 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 23 and 24
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

the specific invention claimed by each of claims 23 and 24 is unclear. See PCT rule 5.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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International application No.
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B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

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PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING
AMENDMENTS OF THE CLAIMS

(PCT Rule 62 and
Administrative Instructions, Section 417)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ETATS-UNIS D'AMERIQUE

in its capacity as International Preliminary Examining Authority

Date of mailing (day/month/year)

31 May 2000 (31.05.00)

International application No.

PCT/IL99/00504

International filing date (day/month/year)

16 September 1999 (16.09.99)

Applicant

REDLER, Yeshayahu

The International Bureau hereby informs the International Preliminary Examining Authority that no amendments under Article 19 have been received by the International Bureau (Administrative Instructions, Section 417).

The International Bureau of WIPO
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1211 Geneva 20, Switzerland

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